

# Fetal, Infant, and Child Death in Montana

A summary of Mortality Reviews conducted in 2005 and 2006

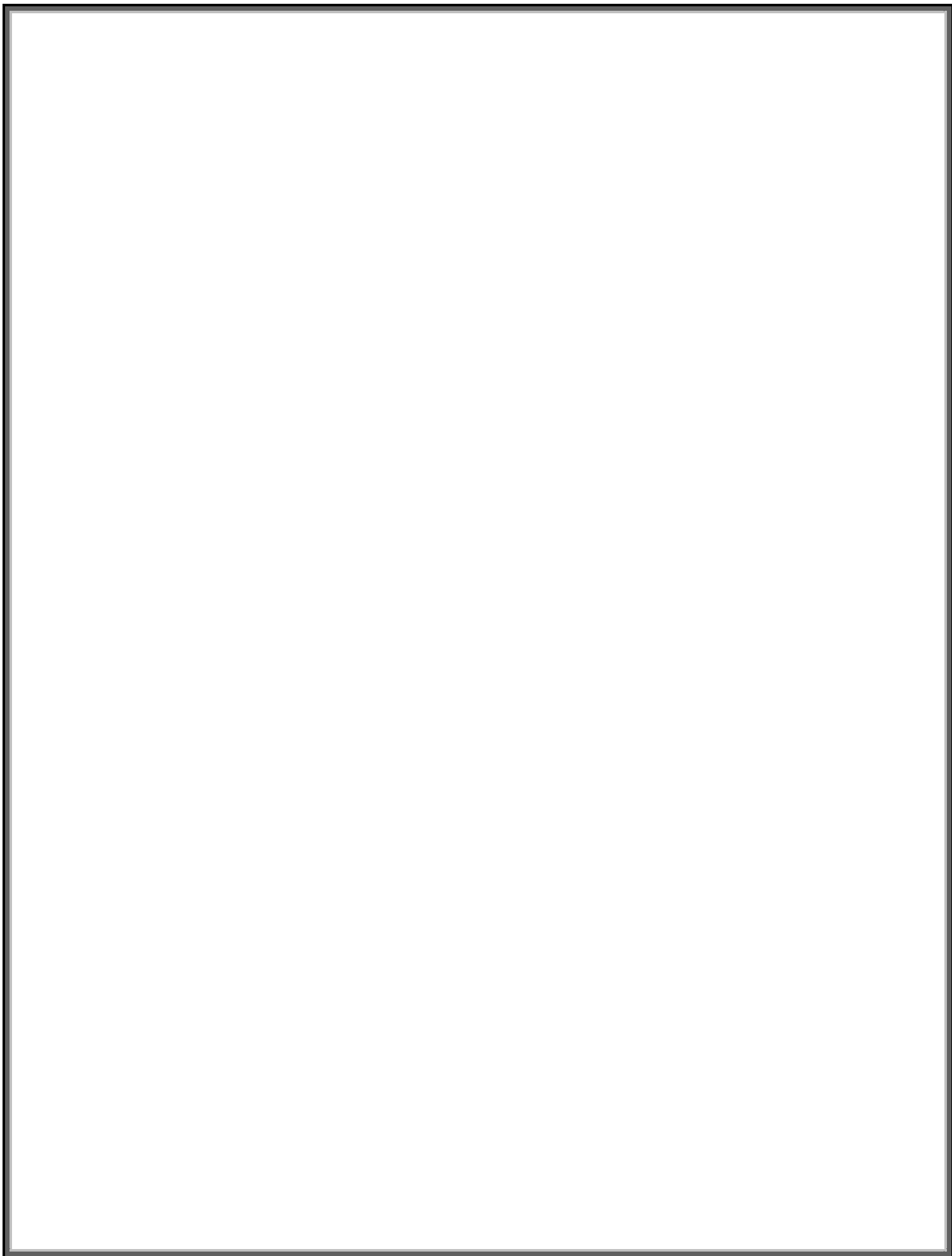
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## Montana Fetal, Infant, and Child Mortality Review Mission:

To identify, address and potentially decrease the numbers of preventable fetal infant and child deaths in the state of Montana.

May 26, 2009





## Dedication

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**This report is dedicated to the memory of the 412 Montana children who died in 2005 and 2006. Their lives were short. Their deaths were not only untimely, but in many cases, preventable. We can learn from these deaths and act to prevent similar deaths in the future.**

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## Acknowledgements

The DPHHS Family and Community Health Bureau would like to thank the following people for their work and professional guidance on this report.

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## INTRODUCTION

In many respects, Montana is known as “the last best place.” This is certainly true for families with children...clean air, fresh water, open spaces, world class recreational opportunities...skiing, hunting, fishing and few of the problems that plague larger urban communities. However, the same qualities that make Montana the last best place can contribute to risk factors for injuries and death.

The state is huge, with vast open spaces and high mountain passes. The weather is notoriously unpredictable and intense with blinding blizzards in winter and hot, dry, drought-stricken summers. Given the tiny isolated towns with few or no health care providers, the distances emergency responders must travel to provide critical care, and the potentially dangerous weather condition, injuries and severe illness are often fatal.

The state is not wealthy, ranking 43<sup>rd</sup> in the United States for per capita income in 2008 (Montana Census and Economic Information Center, Quick Facts 2008, Montana Department of Commerce). Access to health care is limited. The seven American Indian reservations struggle the most with social and economic issues such as unemployment, alcohol abuse, drug use, isolation, and a recently recognized vulnerability to the influences of out-of-state gangs. (Caywood, 2008)

The state is notorious for the “rugged individual” approach to seeking help...it is a culture that admires the ability to “tough it out”. It is a lifestyle in which drinking and driving are often considered a rite of passage. Firearms are present in over 60% of households (Montana BRFSS, 2004). Farming and ranching provide their inherent dangers, requiring young family members to operate heavy equipment at very early ages. Small towns celebrate their high school sports teams and will drive hundreds of miles on glare ice to cheer their teams to victory. Drowning occurs both in summer and winter with risky behavior associated with boating and white water rafting, lake swimming, open irrigation ditches and streams as well as the risks involved with frozen bodies of water. Link all these factors to Montana’s high rates of alcohol use and the stakes are even higher.

Geography cannot be changed...the weather cannot be controlled. Hunting as a sport will always be a part of the Montana landscape. Driving will always be a part of Montana life. However, some of the risk factors for injury and death can be addressed and mitigated. It is to this end that the Montana Fetal, Infant, and Child Mortality Review process directs its efforts.

Montana Fetal, Infant, and Child Mortality Review (FICMR) process was implemented in 1997 and is mandated to address these issues. By using a systematic, scientifically sound review process by a professional, multidisciplinary team as defined by the FICMR legislation, all deaths of Montana infants and children from birth to age 18 are reviewed with the intent to identify causes and develop and implement preventive strategies designed ultimately to save lives.

Montana FICMR teams also review fetal deaths. These reviews often require participation of medical specialists in obstetrics and/or perinatology. Drawing conclusions about the cause and preventability of fetal deaths can be difficult. Preventive measures such as cessation of maternal smoking and early prenatal care are well known and community awareness projects have been implemented by the local FICMR teams. However, prenatal care is primarily an issue of access and is one of the most complex issues facing health care providers and policy makers in this state. For many fetal deaths, the cause is one without clearly identified means of prevention.

Most of the 56 Montana counties participate in death reviews. Small counties with few deaths often partner with neighboring larger counties to conduct the reviews. Deaths that occur on reservations are reviewed by the individual tribes, sometimes in collaboration with neighboring counties, with 6 of the 7 reservations participating.

## **PREVENTION EFFORTS**

Over the past ten years, the Montana FICMR process has identified a number of preventive measures intended to reduce the numbers of infant and child deaths, the most significant of which was the passage and implementation of the graduated driver's licensing legislation in 2005. It is too soon to draw firm conclusions, but according to the 2008 Kids Count Data Book, motor vehicle crashes with the driver under age 18 have been reduced by 447 from 2006 to 2007 (Kids Count Data Book, State Indicators 2008, Annie E. Casey Foundation).

Other efforts include statewide distribution of educational materials addressing the prevention of sudden infant death, gun safety, water safety, and premature birth. Gun locks have been distributed at county fairs, seat belt checkups were conducted, and car seats were checked for proper installation. Suicide prevention activities were implemented in multiple sites across the state. Traffic lights have been placed at dangerous intersections, a traffic circle was created, and an automated external defibrillator (AED) was purchased and is available at a football field. The effectiveness of some of these efforts has yet to be established.

In addition, several process issues have been identified over the tenure of the program. These processes include toxicology screening on all undetermined deaths and unexplained pregnancy abruptions, examination of fetal deaths by a pediatrician or neonatologist that are not going to be autopsied, external cause of death coding of all hospital and emergency room discharges, and proper scene investigation in Sudden Infant Death Syndrome (SIDS) cases.

In October 2008, a brief survey was conducted which asked FICMR coordinators and members of the FICMR State Team to list their top priorities for prevention if money were not an issue. Forty percent of the respondents listed prevention of motor vehicle crashes as their top priority and included passage of a primary seat belt law. Proper use of child restraints was also mentioned frequently. Gun safety, farm safety and water safety were listed by team members. Alcohol/drug

use leading to poor parenting decisions, child abuse and neglect, suicide prevention, and the need for good prenatal care also were mentioned by FICMR participants. Several respondents expressed concerns about these prevention activities and their sustainability. They commented that good programs which are known to work frequently lose their funding and the efforts cannot continue.

## 2005-2006 DEATH REVIEW SUMMARY

Local FICMR teams include members from a variety of disciplines, including public health, law enforcement, medical, tribal, and social services. As a result, FICMR provides a more complete description of the circumstances surrounding a death than just the death certificate alone. While teams aim to review all fetal, infant, and child deaths that occur to Montana residents or in Montana, some deaths may not be reviewed due to a lack of information on the death, litigation, or other factors that affect the team's ability to conduct a review.

In 2005 and 2006 there were 412 fetal, infant and child deaths reported in Montana or to Montana residents. Three hundred and thirty six of these deaths (82%) were reviewed by local FICMR teams. An additional four deaths, two fetal and two child, were reviewed by FICMR teams but were not matched to a death certificate. The lack of a matching death certificate may be because the death occurred out of state or because a death certificate was filed after the year in which the death occurred.

Table 1: *Deaths reviewed, by cause and age group*

	Fetal	Infant	Child	All
Drowning		1	2	3
Electrocution			2	2
Fall			1	1
Fire or Burn			1	1
Accidental Firearm			1	1
Homicide		4	7	11
Medical	95	77	43	215
Motor vehicle		2	38	40
Other Unintentional Injury		1	4	5
Poisoning			2	2
SIDS		19		19
Suffocation		6		6
Suicide			18	18
Undetermined	1	13	2	16
<b>TOTAL</b>	<b>96</b>	<b>123</b>	<b>121</b>	<b>340</b>

This report summarizes the findings from the 340 reviewed deaths. A brief section at the end of the report summarizes the available information on the deaths not reviewed.

The rate of infant and child deaths reviewed was similar for males and females and for white and American Indian deaths. Among the reviewed deaths, 264 were white, 64 were American Indian and 12 were other or unknown races. One hundred eighty two of the reviewed deaths were to males, 153 were to females and in 5 cases the sex was unknown or not reported. Seventy-eight percent of deaths to males were reviewed compared to 80% of deaths to females. Eighty percent of deaths to American Indian and Alaska Native children were reviewed and 78% of

deaths to white children were reviewed.

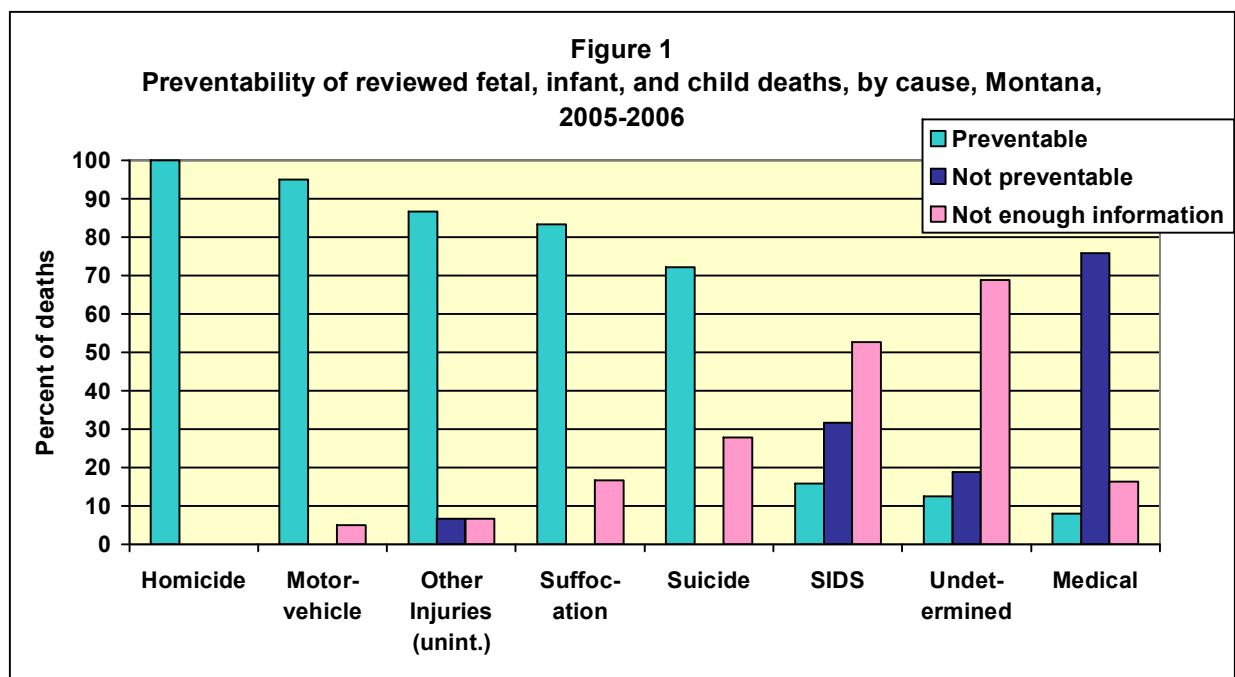
For all age groups, medical diagnoses such as congenital anomalies, prematurity, and malignant neoplasms were the most common cause of death. Among children, motor vehicle crashes were the second most common cause of



death. For infants, (SIDS) was the second most common cause of death among those reviewed.

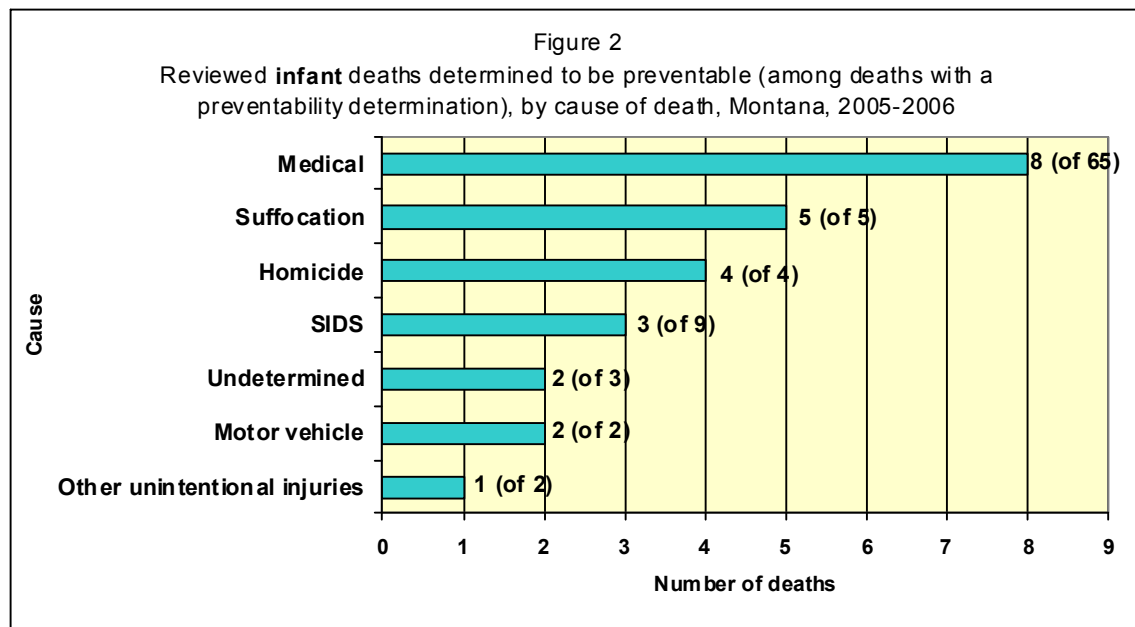
## PREVENTABILITY

A key part of the FICMR process is determining preventability of the deaths. The FICMR teams consider information from a variety of sources to learn more about the circumstances surrounding a death and determine whether a death may have been prevented. A death is considered to be preventable if an individual or the community could reasonably have done something that would have changed the circumstances that led to the child's death. Teams identify the primary risk factors involved in preventable deaths. The purpose of the preventability determination is to identify common factors in the deaths which lead to community and state-level actions to prevent similar deaths from occurring in the future. The reviews do not determine blame or legal responsibility for a death. It is important to keep in mind that not all deaths have enough information to determine preventability. Figure 1 shows the deaths reviewed in 2005 and 2006 that are preventable, not preventable or not enough information to determine preventability.



### Preventable Infant Deaths

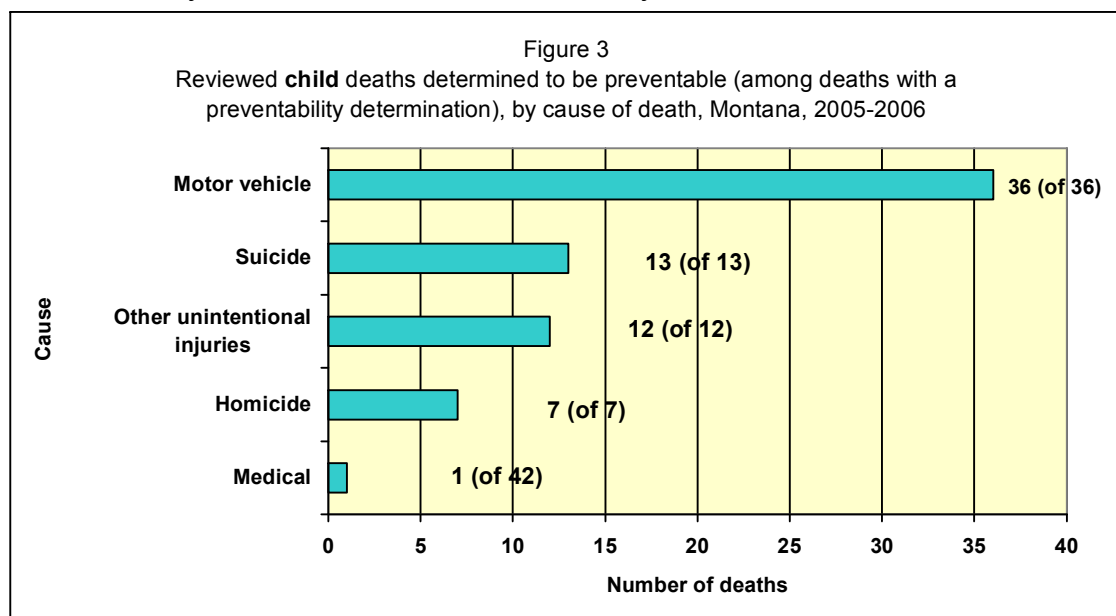
In terms of the numbers of infant deaths that could be prevented, medical deaths such as congenital anomalies and prematurity accounted for the majority (8) of the preventable deaths. However, a higher proportion of infant injury deaths (12 of 14, 86%) such as drownings, homicides, suffocations, and deaths due to motor vehicles are preventable. Figure 2 shows the number of reviewed **infant** deaths determined to be preventable by cause of death.



### Preventable Child Deaths

Among child deaths, the majority of preventable deaths are motor vehicle-related. In 2005-2006, 36 (95%) of 38 motor vehicle deaths reviewed were determined to be preventable. Homicide is another cause of death that is almost always found to be preventable. All seven homicide deaths to children in 2005-2006 were considered preventable by FICMR teams. Deaths due to unintentional injuries such as drowning and poisoning, and suicide deaths are also frequently found to be preventable; 92% of the reviewed unintentional injury deaths and 72% of suicide deaths were considered preventable.

Figure 3 shows the numbers of reviewed child deaths determined to be preventable by FICMR teams in 2005-2006, by cause.



Summaries of the number of deaths, reviews conducted, and prevention efforts undertaken by each county are shown in Appendix A.

## CAUSE OF DEATH

The cause of death is related to the age of the child, and both of these factors are related to the preventability of a death. Fetal and infant deaths are more likely than child deaths to be due to medical causes, and most medical causes of death are not determined to be preventable. Child deaths are more likely than infant or fetal deaths to be due to injuries, whether unintentional or intentional, and are more likely to be preventable than other causes. As a result, deaths to children are more often found to be preventable than fetal and infant deaths.

## SPECIFIC CAUSES OF DEATH SUMMARY

This portion of the report provides a description of 2005-2006 Montana review information by cause of death. For each cause of death recognized risk factors are listed. Also included are nationally recognized "best practices" for prevention. The best practices with an asterisk are "best practice" activities implemented in Montana.

### CAUSE OF DEATH: MOTOR VEHICLE

Forty motor vehicle-related deaths were reviewed. Motor vehicle deaths include those in passenger vehicles, all-terrain vehicles (ATVs), bicycles, and motorcycles, as well as pedestrian deaths when a motor vehicle was involved.

Table 2 summarizes the primary causes of reviewed motor vehicle-related deaths in years 2005 and 2006.

Table 2 *Primary causes of motor vehicle-related deaths, Montana, 2005-2006*

Primary causes	Number of deaths in which the cause was a factor*
Recklessness	12
Drug or alcohol use	12
Speeding	11
Driver inexperience	8
Driver distraction	6
Unsafe speed for conditions	6
Poor visibility	5
Fatigue/sleeping	4
Poor sight line	4
Ran stop sign or red light	3
Poor weather	4
Backover	3
Other driver error	2
Animal in road	1
Racing, not authorized	1
Road hazard	1

\*Some deaths had more than one cause indicated

Of these motor vehicle related deaths, two deaths were infants and the remaining 38 were children ages one year or older. Twenty eight (70%) of the infants and children were white, 11 (28%) were American Indian, and one was listed as "other".

#### ***Passenger vehicles***

In 29 of the deaths the infant or child was driving or riding in a car, van, SUV, or truck. Twenty of the children were teenagers, of which, fourteen were ages 16 or 17.

Ten of the 20 teens were drivers and ranged in age

from 15 to 17 years. The majority of the incidents were single car crashes.

Alcohol or drug use was a factor in 12 of the deaths. In at least 17 of the 29 deaths, a seat belt or infant/toddler car seat was not used or was used incorrectly. Twenty-eight (97%) of the deaths were considered preventable. *Factors that may have contributed to the preventable deaths include alcohol and drug use, lack of seat belt and child safety seat use, inattentive and reckless driving, and driver's inexperience.*

### ***Pedestrians***

Four of the children were pedestrians or outside of the vehicle when they were killed. Two deaths occurred in a driveway, one on a residential street, and one in a parking area. All occurred during the day, between 6:00 am and 6:00 pm. In three cases the child was backed over by the vehicle. Three of the cases were considered definitely preventable. In one case preventability could not be determined. *Factors that may have contributed to the preventable deaths include a lack of supervision and preoccupied drivers.*

### ***All-terrain vehicles***

In three deaths the child was driving an ATV. Two of the children were under age 10 and one was 14. All three cases were determined to be preventable by the FICMR team. *Factors that contributed to the deaths include incorrect or no use of helmets, young and inexperienced drivers, recklessness, unsafe speed, and icy conditions.*

### ***Bicycles***

Three children, ranging in age from three to 14 years, were riding bicycles and were struck by a truck or SUV. In all three cases the children were not wearing helmets. All three deaths were considered preventable. *Factors that contributed to the deaths include lack of helmets, poor visibility of cyclists, unsafe roads, riding a bike at night without lights, biking with ear phones, drunk driving, and lack of supervision.*

### ***Motorcycles***

One 13 year old child was killed while driving a motorcycle. The child crossed into the other lane on a curve and was hit by another vehicle. *The location was a rural road and loose gravel, driver inexperience, and lack of working back brakes were contributing factors.* The death was considered preventable by the FICMR team.

### **+++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS: Children Under 16**

- Not using or improper use of child restraints, including seatbelts, infant and booster seats
- Riding in truck beds or other unrestrained areas of motor vehicles
- Unskilled or unsupervised drivers of recreational vehicles, including snow mobiles, jet skis, all terrain vehicles, go-carts and dirt bikes, motor boats
- Riding in the front seat of vehicles
- Small children playing in and around vehicles or crossing streets without supervision
- Riding with someone who is under the influence of alcohol
- Riding in a car with two or more teen passengers
- Riding in a car as a passenger with a new teen driver

### **NATIONALLY RECOGNIZED MAJOR RISK FACTORS: Children Over 16**

- New driver inexperience and/or recklessness
- Riding in a car with two or more teen passengers
- Exceeding safe speeds for driving conditions
- Not using appropriate restraints
- Riding in a car as a passenger with a new teen driver
- Using alcohol while driving, or riding with someone who is under the influence of alcohol
- Driving between 12:00 am and 6:00 a.m.
- Riding in the bed of a pickup truck
- Using a cell phone while driving

### **+++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION: Children Under 16**

- Lower Anchors and Tethers for Children (LATCH): USDOT requires all new child safety seats meet stricter head protection standards
- \*Education to increase booster seat usage for children between 40 and 80 lbs
- \*Child Safety Seat Inspection Programs
- \*Free or low cost car seat distribution
- Bicycle helmet laws and free or reduced cost helmets to children
- Truck bed laws prohibiting children from riding in truck beds and KIDS AREN'T CARGO as an educational campaign discouraging truck bed riding
- \*Re-engineer roads and improve signage

### **+++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION: Children Over 16**

- \*Graduated licensing laws
- Teen Driver Monitoring Programs, Street Watch and SAV-TEEN marks teen cars and allows anyone observing poor driving habits to report them to law enforcement followed by visits to the teen's home or reports to parents
- Driver education customized to local needs to emphasize common risk factors
- Seat belts, programs to increase use by adolescents, primary seat belt laws
- \*Re-engineer roads and improve signage
- Eliminate driving under the influence of alcohol/drugs

*\* implemented fully or in part in Montana*

+++ References: National MCH Center for Child Death Review; Multi-tasking in the Car, New York Times, November 19, 2008

## CAUSE OF DEATH: SUFFOCATION

In 2005-2006 there were six suffocation deaths reviewed, all infants. Three were white and three were American Indian. In all but one of the cases, the infant was sleeping with a parent or another person, and in four cases the child was sharing a couch or bed with pillows, heavy bedding or other items such as stuffed animals.

In three deaths, use of alcohol or prescription painkillers and bed-sharing with an adult were involved. In one death a sleeping infant in a carseat had been removed from the car and unbuckled. The carseat turned over and the infant was caught in a strap.

Five of the deaths were determined to have been preventable; one death did not have enough information to determine preventability. *Factors that contributed to the preventable deaths include an unsafe sleeping location (adult bed, bed-sharing with intoxicated adults, soft pillows or bedding) alcohol use by a caregiver, and lack of supervision.*

### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Infants sharing sleep surfaces with other persons
- Unsafe infant bedding including couches, waterbeds, poor-fitting mattresses
- Infant beds filled with clutter, heavy or numerous blankets and soft mattresses
- Easy access to small objects, balloons and toys with small parts
- Easy access to cords and ropes
- Toy chests without safety latches, heavy furniture not secured to floors or walls
- Faulty design of cribs, beds, other hazards
- Inappropriate size and texture of foods
- Obesity, fatigue, drug or alcohol use by persons supervising or sleeping with child
- Number and ages of persons sleeping with child
- Quality of supervision at time of death
- Child's ability to gain access to objects causing choking or confinement
- Family's ability to provide safe sleep or play environment for child
- Prior child deaths or repeated reports of apnea episodes by caregiver
- Accessibility of discarded refrigerators and other hazards

### +++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION

- Training in the Heimlich maneuver
- \*Education for parents and caregivers on safe infant sleep environments
- \*Back to Sleep campaign
- \*Crib distribution programs for needy families
- Licensing requirements for day care providers on safe sleep environments
- Continued product safety recalls

*\* implemented fully or in part in Montana*

+++ References: Harborview Injury Prevention and Research Center; National MCH Center for Child Death Review

## CAUSE OF DEATH: ACCIDENTAL FIREARM

There was one review of an accidental firearm death of a child in 2005-2006. The child was a teenage male who was shot in the chest by another teenager when the weapon was being loaded. *Factors that contributed to this death included gun not stored in a locked cabinet, no gun lock, and lack of supervision.* The death was determined to have been preventable.

### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Easy availability of and access to firearms
- Youth living in neighborhoods with high rates of poverty, social isolation and family violence
- Youth with little or no adult supervision
- Male

### +++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION

- Ensure that firearms are kept in secure, locked storage units
- \*Hunter safety instruction/ gun handling programs/ gun use for self defense
- \*Gun locks
- Restriction on obtaining ammunition
- \*School based violence prevention programs
- Legislation to: restrict carrying in public places, waiting periods, restrictions on certain types of firearms, licensing of owners, owner liability for harm to others caused by guns, right to carry.
- Gun buy-back programs
- Metal detectors in schools

\* implemented fully or in part in Montana

+++ References: National MCH Center for Child Death Review; Harborview Injury Prevention and Research Center

## CAUSE OF DEATH: DROWNING

Three deaths due to drowning were reviewed. The deaths involved one six-month old infant and two children aged two and three years. All three deaths were determined to be preventable. *Factors that contributed to the deaths include a lack of adult supervision and lack of fencing between houses and bodies of water.*

### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Poverty
- Lapse in adult supervision
- Lack of adult supervision
- Children under age four
- Male
- Unlocked gates and inadequate fencing of pools and ponds
- Easy, unsupervised access to open bodies of water
- Drug or alcohol use by supervising adults
- Child's ability to gain access to pools, ponds, other bodies of water
- Child's ability to swim
- Whether a personal floatation device was appropriate and used
- Alcohol or drug use around water by adolescents

### +++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION

- Adult supervision
- \*Boating safety training programs
- Decreased alcohol use
- Lifeguards
- Personal flotation devices
- Pool alarms
- Pool covers
- Pool fencing
- Swimming lessons
- \*Strong support and local enforcement of building codes regarding proper pool and pond enclosures
- \*Placement of signage near bodies of water to warn of possible water dangers such as strong currents and drop-offs
- \*Parent education on bathtub safety for infants and toddlers
- Drain unnecessary accumulations of water (ponds, ditches, buckets)
- Build safe bridges and piped water systems to reduce exposure to open water
- \*Teach lifesaving, first aid skills, CPR to parents, caregivers, community

*\* implemented fully or in part in Montana*

+++ References: National MCH Center for Child Death Review; World Health Organization; UNICEF; Harborview Injury Prevention and Research Center

## CAUSE OF DEATH: ELECTROCUTION

Two reviewed deaths of teenagers were due to electrocution. Both deaths were determined to be preventable. *Factors that contributed to the deaths include misplacement or lack of maintenance of electrical wires and inattention to location of overhead power lines.*

### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Lack of or lapse in supervision or attention
- Exposed, or non-child-proofed outlets and cords
- Faulty appliances
- Using electrical equipment near bathtubs or other water sources
- Poorly maintained or low-hanging wiring

### +++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION

- Use ground fault circuit interrupters (GFCI) when working where water is near to protect against electrical shock
- Avoid contact with power lines or low hanging wiring, keeping a distance of at least ten feet to prevent arcing
- \*Use electrical outlet covers for unused electrical sockets
- Short cords on appliances will minimize toddler exposure to cords
- Alertness to location of overhanging wires when driving farm or gardening equipment

*\* implemented fully or in part in Montana*

+++ References: Harborview Injury Prevention and Research Center; Fire and Electrical Safety Foundation International (ESFI) and National MCH Center for Child Death Review.



## CAUSE OF DEATH: FALL

One death due to a fall was reviewed. The 14 year old child was snowboarding, went airborne and struck a tree. This fall was not a typical fall injury death. Fall deaths are often related to children climbing on tall items such as fences or playground equipment or falling down stairs. The FICMR team determined that the death was preventable. *Contributing factors to the death were lack of supervision and inexperience with snowboarding.*

### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Lack or lapse in supervision
- Absent barriers, gates, restraints
- Inadequate preparation for use of recreational equipment
- Baby walkers

### +++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION

- Eliminate baby walkers
- Stair gates
- Window guards
- \*Belts in shopping carts
- Better building codes
- Fencing
- \*Playground design and surfacing materials
- Ensure adequate preparation for use of recreational equipment (skiing, climbing, water sports, skate boarding)
- Day care regulations

*\* implemented fully or in part in Montana*

+++ Reference: Harborview Injury Prevention and Research Center

## CAUSE OF DEATH: FIRE AND BURN

One child death due to fire was reviewed in 2005-2006. The source of the fire was an unattended cigarette left burning on a porch. The death was determined to be preventable. *Lack of supervision and smoking were factors that contributed to the death.*

### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Child's ability to gain access to lighters, matches or other incendiary devices.
- Homes without working smoke detectors
- Children under the age five
- Black and American Indian males
- Children from low income families
- Quality of supervision at the time of death
- Drug/alcohol use of supervising adults
- Members of the household falling asleep while smoking or leaving candles burning
- Lack of a fire escape plan
- Use of alternative heating sources, substandard appliances or outdated wiring
- Misuse of surge suppressors and extension cords-plugging too many items into one outlet
- Failure of property to maintain code requirements
- Timeliness of fire rescue response

### **+++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION**

- \*Smoke detector distribution targeted in low income neighborhoods
- Legislation requiring installation of detectors in new and existing housing
- Risk Watch or similar programs in schools, preschools and day care settings to teach fire safety and home fire escapes
- Utilization of mobile “Smoke Houses” by fire departments to teach children how fires start, how fast they can spread and how best to escape a burning house
- Codes requiring hard-wired detectors in new housing
- Passage and enforcement of local ordinances requiring inspection of rental units for fire safety, especially for the presence of smoke detectors
- Reduction of tap water temperature
- Product modification (stove guards) to prevent spills of hot liquids
- Limit the number of items plugged into outlets
- Flammable Fabrics Act
- Safety education around fireworks

*\* implemented fully or in part in Montana*

+++ References: National MCH Center for Child Death Review; Harborview Injury Prevention and Research Center; and Fire and Electrical Safety Foundation International (ESFI)

## CAUSE OF DEATH: POISONING

Two reviewed deaths were due to poisoning by drug overdose. Both children were teenage males. One death was considered to be preventable; preventability could not be determined in the second death. *A contributing factor in both deaths was access to drugs.*

### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Lack of supervision
- Accessibility of medications and other poisonous materials
- Faulty equipment with exposure to carbon monoxide and other gases
- Easily opened containers
- Binge drinking on the part of adolescents

### +++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION

- Child resistant packaging
- Poison Packaging Prevention Act
- Warning labels (Mr. Yuk stickers)
- Bittering agents
- Physician-based education programs
- \*Community-based education programs
- Carbon monoxide alarms
- \*Poison Control Centers
- Use of Syrup of Ipecac

*\* implemented fully or in part in Montana*

+++ Reference: Harborview Injury Prevention and Research Center

## CAUSE OF DEATH: OTHER UNINTENTIONAL INJURY

Other injuries accounted for five of the reviewed deaths; one was an infant and the other four were children. The causes of these injuries included a dog attack, hypothermia, hyperthermia, an accident involving farm equipment, and results of a procedure during a premature delivery. All but one of these deaths were determined to have been preventable. The death involving a procedure during a birth was determined to be not preventable because it was an unforeseen consequence of a required procedure. *Factors that contributed to the preventable deaths included a lack of adult supervision and allowing children to work with or around farming equipment.*

### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Lack of adequate supervision
- Homes that are not child-proofed
- Unsafe consumer products including toys and baby products

### +++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION

- \*Promote educational programs on issues surrounding safe environments
- Legislation and enforcement of laws that ensure safety of toys

*\* implemented fully or in part in Montana*

+++ References: National MCH Center for Child Death Review

## CAUSE OF DEATH: MEDICAL

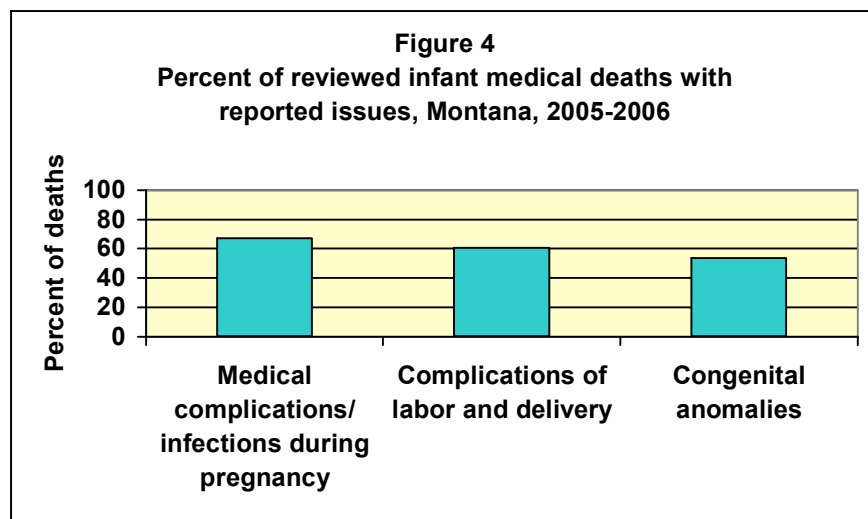
Among the reviewed medical deaths of infants and children, 164 were white, 40 were American Indian, seven were unknown or other races and four were multiple races. These deaths had multiple causes, such as extreme prematurity, malignant neoplasms, maternal complications of pregnancy, complications of the placenta, cord, and membranes, respiratory distress, infections, metabolic disorders, congenital conditions, and birth asphyxia.

### **Infants**

Among the infant deaths, 62% had less than 37 completed weeks of gestation; 49% had gestational ages of less than 32 weeks. An ideal gestational age is at least 37 completed weeks of gestation.

Only 38% of the infants had a birth weight of 2500 grams (5 lbs 8 oz) or more. Sixteen percent of infants were low birth weight (1500 to 2499 grams) and 52% were very low birth weight (less than 1500 grams or 3 lbs 5 oz). Ten percent of the births were twins or multiple deliveries.

In at least 29% of the infant deaths, the mother smoked during the pregnancy. Alcohol was used during at least 13% of the pregnancies. In seven cases drug use was known or suspected to have taken place during the pregnancy.



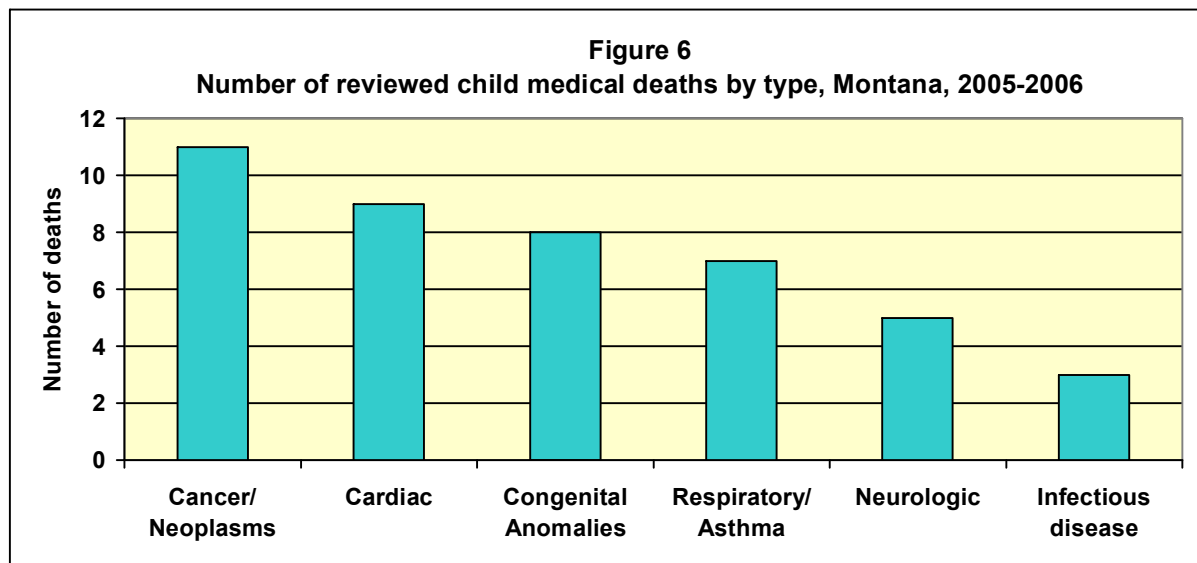
At least half of the infant deaths due to medical causes reported medical complications or infections during pregnancy, complications of labor and delivery, or congenital anomalies (Figure 4). In these cases, it can be difficult to determine which conditions actually contributed to the death and which conditions or complications were a result of the underlying cause. However, all of these are indications that the infant's health was already affected by the time of birth.

Among the infant deaths due to medical causes, eight were definitely preventable and 56 (74%) were not considered preventable. Preventability could not be determined for 12 of the infant deaths. *The most common elements noted that may have contributed to the eight preventable deaths include alcohol or drug use, lack of parenting skills, lack of compliance with medical advice, and lack of medical care.*

## Children

Forty-three child deaths due to medical causes were reviewed. The children ranged in age from one to 17 years. Figure 5 shows that in the majority of cases the death was expected. In these expected deaths, the child had been sick since birth or for a number of years. In at least 91% of the reviewed cases, the child was known to have been receiving medical care at the time of the death. In at least 79% of the cases, the parents or caregivers were compliant with the prescribed care for the child and the care plans were appropriate for the medical condition. A lack of a care plan or unknown compliance with the care plan occurred in 21% of the medical deaths.

In two cases issues were identified that might have affected the child or family's ability to obtain or provide appropriate care. The causes for these included lack of money for care, limitations of health insurance coverage, and referrals that were not made. Figure 6 shows the number of reviewed child deaths by medical type.



Forty-two (98%) of the reviewed child medical deaths had enough information to determine preventability, and all but one was determined not to be preventable. *The one death that was determined to be preventable was related to equipment failure and lack of appropriate care by a caregiver.*

### **+++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS: Infants**

- Prior pre-term delivery
- Previous infant or fetal loss
- Adequacy of prenatal care (early, missed appointments)
- Medical conditions of the mother
- Maternal age (under 20-over 35)
- Infections including sexually transmitted
- Hypertension
- Diabetes
- Poor nutrition
- Obesity
- Short inter-pregnancy interval
- Poverty
- Substance, alcohol and tobacco use
- Stressors and lack of social support
- Less than 12<sup>th</sup> grade education
- Unintended unplanned pregnancy

### **NATIONALLY RECOGNIZED MAJOR RISK FACTORS: Children Over One Year of Age**

- Children with congenital anomalies and other genetic disorders
- Children who do not receive preventive medical care
- Children who live in poverty
- Children with chronic health conditions
- Exposure to environmental hazards, especially vulnerable children
- Non-compliance with prescribed treatment regimens
- Failure to seek adequate medical attention by parents or caregivers

### **+++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION: Infants**

- \*Pre-conception care
- \*Accessible, appropriate, available prenatal care
- \*Improved emergency response and transport systems
- \*Improved support services to improved social/psychological environments
- \*Comprehensive risk assessment
- \*Develop and distribute community resource directories...where to go for help
- \*Provide mentoring, support, outreach, advocacy services
- Provide transportation and child care to women seeking prenatal care
- \*Coordination of care between programs and parts of the health care system
- \*Enhanced community education re: unplanned pregnancy prevention, early detection of pre-term labor

### **EVIDENCE BASED BEST PRACTICES FOR PREVENTION: Children Over One Year of Age**

- \*Foster coordinated wrap-around services for chronically ill children
- \*Develop community education re: chronic health conditions such as asthma
- Provide schools with sufficient information and training for children with chronic health conditions
- \*Conduct assessments and remove suspected environmental health hazards

*\* implemented fully or in part in Montana*

+++ Reference: National MCH Center for Child Death Review

## **CAUSE OF DEATH: UNDETERMINED CAUSE**

Two child deaths with an undetermined cause were reviewed by FICMR teams. One child was four years old and one was six years old.

In one death there was previous substantiated abuse or neglect of the child by the primary caregiver, but not enough information to determine whether the death was preventable.

In the second death, the child was born with a terminal medical condition. The child was receiving medical care for the condition and the primary caregivers were compliant with the prescribed care plan. This death was determined not to be preventable.

Undetermined infant deaths are included in the discussion below on SIDS and sudden undetermined infant death.

## **CAUSE OF DEATH: SUDDEN INFANT DEATH SYNDROME (SIDS) AND INFANT DEATHS WITH UNDETERMINED CAUSE**

SIDS is the sudden death of an infant under one year of age which remains unexplained after a complete autopsy, examination of the death scene and review of the baby's health history. If any of these three steps is not conducted, a SIDS diagnosis should not be made. Even when all of this information is available, it can be difficult to distinguish SIDS deaths from other types of deaths, such as suffocation or deaths with an undetermined cause. Because of the similarities and complexities of determining these causes of deaths, all SIDS and undetermined cause infant deaths are reviewed for risk factors related to the sleeping environment and position.

Figure 7 shows the frequency of selected risk factors for SIDS and undetermined cause infant deaths. The deaths reviewed by FICMR teams include 19 SIDS deaths and 13 infant deaths with an undetermined cause. All but one of the deaths had a risk factor present.

Preventability could not be determined for ten of the SIDS deaths and ten of the undetermined deaths. Three SIDS deaths and two undetermined deaths were determined to be preventable. Six SIDS deaths and one undetermined death were considered not preventable.

### **+++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS**

- Infants not sleeping on their backs
- Soft infant sleep surfaces and loose bedding
- Maternal smoking during pregnancy
- Second hand smoke exposure
- Overheating
- Prematurity/low birth weight
- Infant sharing a bed with others
- Place and position where child was sleeping or playing
- Type of bedding, blankets and other objects near child
- Faulty design of crib or bed
- Number and ages of persons sleeping with child
- Obesity, fatigue or drugs or alcohol use by person sleeping with child
- Quality of supervision at time of death
- Family's ability to provide safe sleep or play environment for the child

### **+++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION**

- \*Education at childbirth classes, public health departments and in hospitals on safe sleep environment
- In-hospital assessments by nurses with parents to assess a baby's sleep environment
- \*Crib distribution programs
- \*Smoking cessation education and support
- Ensuring that every infant that leaves the hospital has a primary care provider
- \*The Back to Sleep campaign
- \*Specific messages targeted to families and care providers who traditionally practice stomach sleep position
- Education to health care providers on giving guidance of SIDS risk reduction
- Licensing requirements for daycare providers on safe sleep environments and infant sleep positions

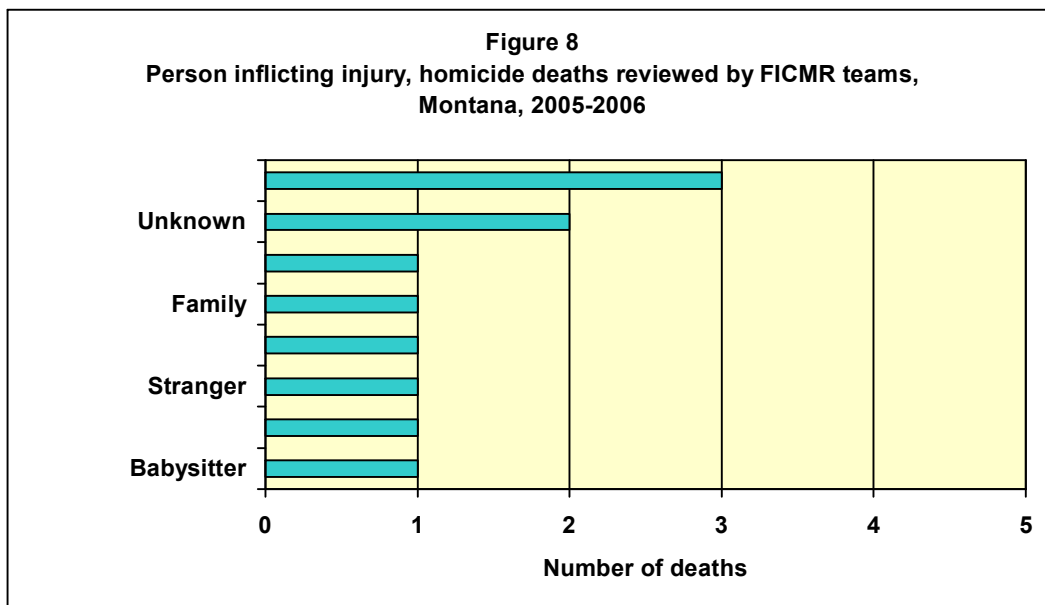
*\* implemented fully or in part in Montana*

+++ Reference: National MCH Center for Child Death Review



## CAUSE OF DEATH: HOMICIDE

Eleven homicide deaths were reviewed by FICMR teams; four were infants and seven were children. Nine of the infants and children were white and two were American Indian. Seven of the deaths were related to child abuse or neglect. In four cases there was evidence of prior abuse or neglect. Three of the deaths were by firearm. All reviewed homicides were determined to have been preventable. The homicides were most often perpetrated by a family member or someone who knew the child. Figure 8 identifies the person inflicting the injury in homicide deaths reviewed by FICMR teams in Montana in 2005 and 2006. *The most commonly reported factors that may have contributed to the deaths were inadequate supervision and child abuse or other violence in the home.*



### +++ NATIONALLY RECOGNIZED MAJOR RISK FACTORS:

#### Infants and Children

- Younger children, especially under the age of five
- Parents/caregivers under the age of 30
- Low income, single parent families experiencing major stresses
- Children left with male caregivers who lack emotional attachment to the child
- Children with emotional and health problems
- Lack of suitable childcare
- Substance abuse among caregivers
- Unrealistic expectations of child development and behavior by parents/caregivers

### NATIONALLY RECOGNIZED MAJOR RISK FACTORS:

#### Older Children/Youth

- Youth active in drug and gang activity
- Prior history of early school failure, delinquency and violence
- Easy availability of and access to firearms
- Poverty, social isolation, family violence
- Youth with little or no adult supervision
- Prior witnessing of violence

### **+++ EVIDENCE BASED BEST PRACTICES FOR PREVENTION:**

#### **Infants and Children**

- Training of emergency room staff to improve identification of child abuse and fatalities and improve reporting to appropriate agencies
- \*Case management, referral, follow up of infants sent home with serious health or developmental problems
- Media campaigns to inform public on fatality-producing behaviors such as shaken baby, purple crying period
- Crisis nurseries which serve as safe havens for parents on “the edge” where they can leave their children for a specified length of time at no charge
- \*Intensive home visiting services to parents of at risk infants and toddlers
- \*Education programs for parents (PET, STEP)

### **EVIDENCE BASED BEST PRACTICES FOR PREVENTION:**

#### **Older Children/Youth**

- \*Intensive, early intervention services for high-risk parents (home visiting)
- Targeted activities in neighborhoods with high homicide rates
- Enhanced police presence and gun deterrence
- \*After school recreation programs
- Interdiction of illegal guns and focused prosecution of gun offenders
- \*Neighborhood Watch
- \*Dropout prevention programs, alternative education opportunities
- \*Mentoring, therapy and bullying prevention
- Multi-system therapy for troubled youth

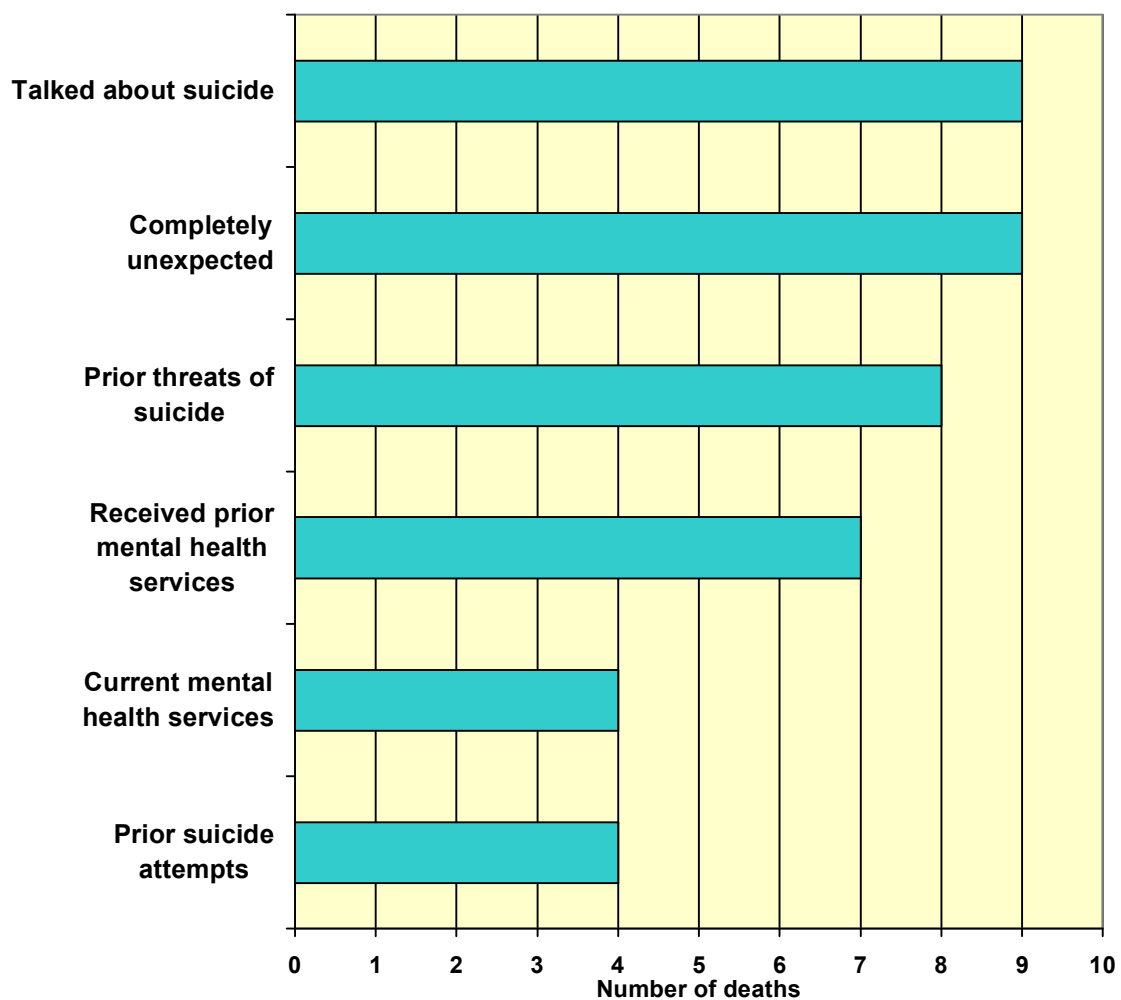
*\* implemented fully or in part in Montana*

+++ Reference: National MCH Center for Child Death Review

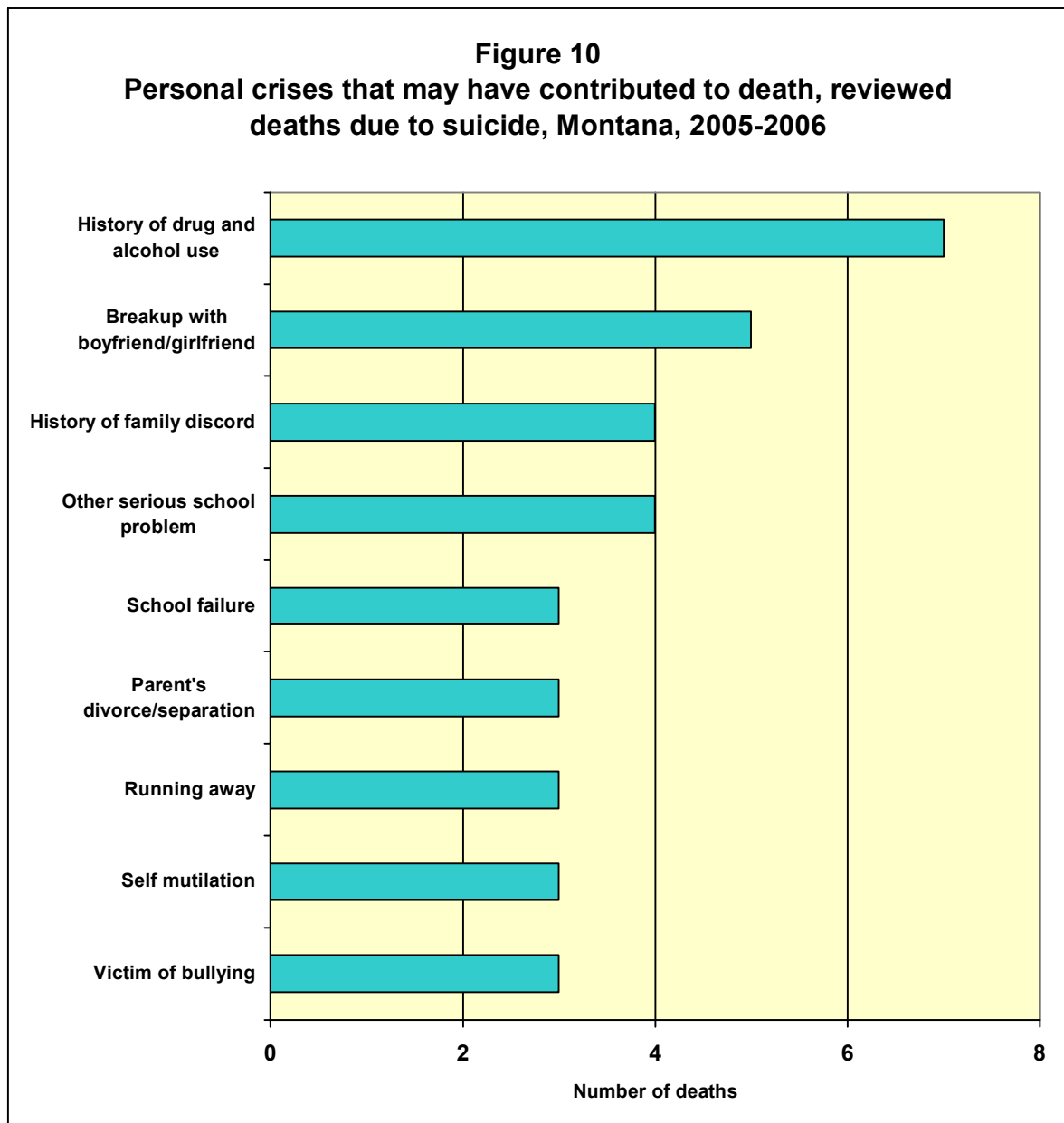
## **CAUSE OF DEATH: SUICIDE**

Local FICMR teams reviewed 18 deaths due to suicide of youth ranging in age from 12 to 17 years. Among the reviewed deaths, 15 of the children were white and three of the children were American Indian. The majority of the suicide deaths (78%) were males and occurred in the child’s home (89%). Thirteen of the deaths were caused by a firearm and five were caused by strangulation. Thirteen of the reviewed deaths were considered to be definitely preventable by the local FICMR team. Nine of the reviewed suicide deaths were unexpected and eight children had made prior threats of suicide. Prior suicide attempts were made by four of the children. Figure 9 shows the most commonly reported suicide circumstances of the reviewed suicide deaths.

**Figure 9**  
**Most commonly reported suicide circumstances, reviewed suicide**  
**deaths, Montana, 2005-2006**



Personal crises that may have contributed to the suicide death are shown in Figure 10. These include: history of alcohol and drug use, breakup with a boyfriend or girlfriend, history of family discord, parent's divorce or separation, serious school problem and school failure, run away, self mutilation and victim of bullying.



### +++ **NATIONALLY RECOGNIZED MAJOR RISK FACTORS**

- Long term or serious depression
- Previous suicide attempt
- Mood disorders and mental illness
- Substance abuse
- Childhood maltreatment
- Parental separation or divorce
- Inappropriate access to firearms
- Interpersonal conflicts or losses without social support
- Previous suicide by a relative or close friend
- Other significant struggles such as bullying or issues of sexuality
- Isolation

### +++ **EVIDENCE BASED BEST PRACTICES FOR PREVENTION**

- \*The Yellow Ribbon Suicide Prevention Campaign to help youths identify places to get help when they or their friends are troubled
- \*School gatekeeper training to help staff identify and refer students at risk
- \*Community gatekeeper/suicide risk assessment training for community members who interact frequently with teens
- \*General suicide education targeted to teens to help understand warning signs and support services
- \*Screening programs, including those in schools, to identify students with problems that could be related to potential suicide
- \*Peer support programs that foster positive peer relationships and competency in social skills among high risk adolescents and young adults
- \*Crisis centers and hot lines
- \*Restriction of access to lethal means of suicide including gun locks and removal of firearms in homes of high risk teens
- \*Interventions after a suicide that focus on friends and relatives to help prevent or contain clusters and to help the adolescents and young adults cope effectively with the feelings of loss/ guilt that follow a suicide
- Development of assessment tools for evaluating suicide risk for students who are expelled from school or arrested for minor offenses

*\* implemented fully or in part in Montana*

+++ References: National MCH Center for Child Death Review; Harborview Injury Prevention and Research Center

## FETAL DEATHS

Ninety-six out of the 103 reported fetal deaths that occurred in 2005-2006 were reviewed by FICMR teams. All but one of these deaths were due to medical causes. One death was due to an undetermined cause.

The types of medical conditions that caused the deaths were congenital anomalies and conditions originating in the perinatal period, such as intrauterine hypoxia and complications of the placenta, cord, and membranes.

Eight of the fetal deaths were determined to be preventable, and 66 were not preventable. Preventability could not be determined for twenty-two of the fetal deaths. Factors that may have contributed to the preventable deaths include delayed medical intervention, no access or late access to prenatal care, maternal drug use, and lack of compliance with medical advice.

### NATIONALLY RECOGNIZED MAJOR RISK FACTORS

- Maternal age
- Underlying maternal morbidity (diabetes, genetic abnormality, infection)
- Maternal complications of pregnancy (eclampsia, placental problems)
- Multiple pregnancy (twin, triplet)
- Pregnancy spacing
- Smoking/tobacco use
- Alcohol/drug use
- Domestic violence/ maternal stress
- Poor nutrition
- Poverty
- Lack of prenatal care

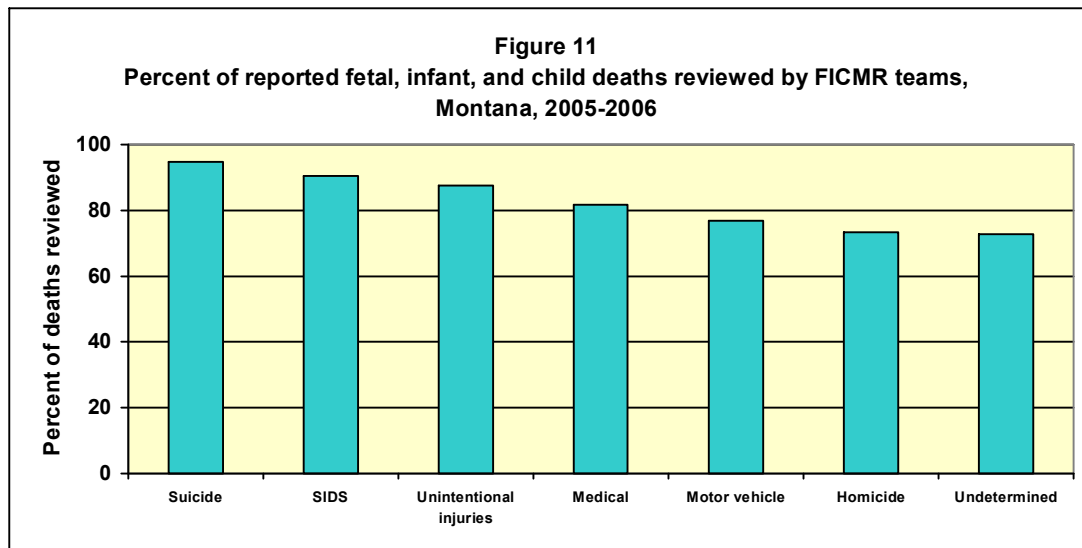
### EVIDENCE BASED BEST PRACTICES FOR PREVENTION

- \*Pre-conceptual care
- \*Early and comprehensive prenatal care
- \*Smoking cessation
- \*Folic acid
- \*Early identification of risk factors and early intervention
- \*Home visiting

*\* implemented fully or in part in Montana*

## REVIEWED DEATHS

Eighty-two percent of 2005-2006 fetal, infant, and child deaths reported to the Montana Office of Vital Statistics were reviewed by FICMR teams. Ninety-seven percent of fetal deaths, 76% of infant deaths, and 86% of child deaths were reviewed by FICMR teams. Suicide deaths had the highest rate of reviews – 95% - and homicide deaths and deaths with an undetermined cause both had the lowest rate of reviews – 73%. Deaths reviewed by cause of death are listed in Figure 11.



## DEATHS NOT REVIEWED

Seventy-six deaths were not reviewed. Thirty-eight of these deaths were to infants, 29 to children, and nine were fetal deaths. Deaths may not be reviewed for a variety of reasons, including unavailable death certificates and pending litigation related to the death.

### Fetal deaths not reviewed

The nine fetal deaths not reviewed were all due to medical causes, primarily complications of the placenta, cord, and membranes.

### Infant deaths not reviewed

The majority (79%) of the 38 infant deaths not reviewed were due to medical causes, primarily extreme prematurity, congenital malformations and chromosomal abnormalities, and maternal complications of pregnancy. Other unreviewed deaths were undetermined causes (4), SIDS (2), homicide (1), and motor vehicle-related incidents (1).

### Child deaths not reviewed

The two most common unreviewed deaths were motor vehicle crashes and medical causes. Three homicide deaths, three unintentional injury deaths, two deaths with an undetermined cause, and one suicide death were not reviewed.

## CONCLUSIONS

The Montana Fetal, Infant, and Child Mortality Review process has been in place for over a decade, since 1997, and reports have summarized events through 2006. In that time period, the review process has become well established and is functioning according to the requirements of the FICMR legislation. (Appendix E)

In reviewing the 2005-2006 deaths, several major factors emerge in terms of the circumstances surrounding deaths of Montana infants and children.

- **Poor or inadequate supervision**

Inadequate adult supervision was a factor in at least 88% of the preventable deaths, and was most often reported as a concern for deaths due to unintentional injuries such as motor vehicle crashes, suffocation, and drowning.

- **Alcohol and drug use**

Substance use, either by the individual who died or by a parent or caretaker was a factor in motor vehicle crashes, homicides, suffocation deaths, and other types of unintentional injury deaths.

- **Use of available safety measures**

Motor vehicle deaths remain a leading cause of child deaths. In at least 65% of the motor vehicle deaths where a seatbelt, child safety seat, or helmet should have been used, the safety measures were not used or were used incorrectly.

Firearms were involved in 16 reviewed unintentional injury deaths, homicides, and suicides in 2005-2006. Easily accessible firearms contributed to these deaths. In 88% of the deaths, the firearm was not stored in a locked cabinet. In over half of the cases the firearm did not have a trigger lock.

- **Safe sleep environments**

Exposure to smoke, sharing sleep surfaces with others, and improper sleep position continue to put children at risk of SIDS, suffocation, and sudden, unexpected deaths in spite of educational efforts.

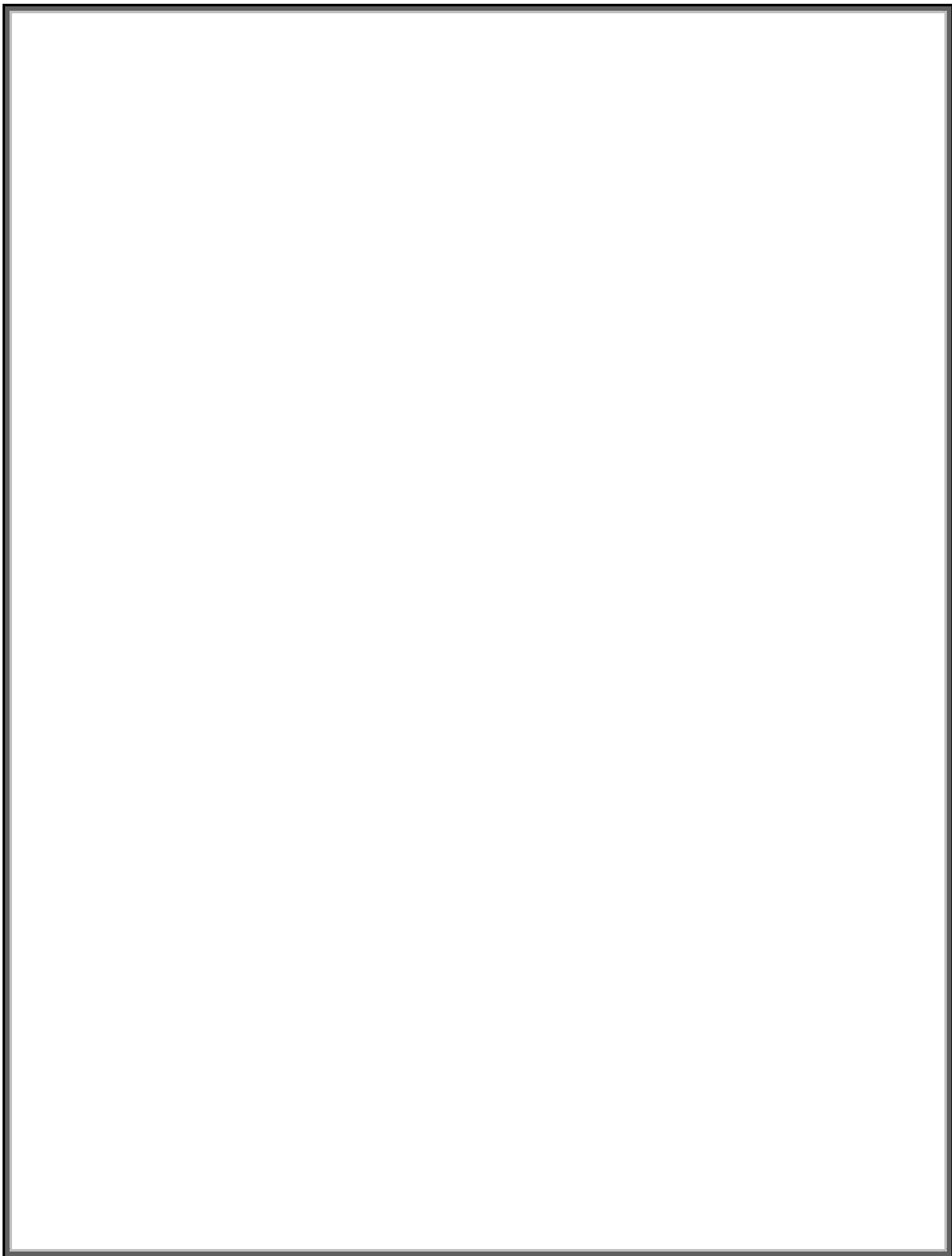


## **RECOMMENDATIONS AND FUTURE PLANS**

- Continue to promote prevention efforts at the local and state level utilizing best practices and interventions proven to achieve positive results
- Seek adequate funding for prevention projects
- Continue to promote participation in FICMR by all counties and reservations
- Provide continuing education regarding death scene investigation
- Encourage participation by coroners
- Continue to provide bi-yearly meetings and training for local FICMR coordinators
- Continue to seek adequate and sustainable resources for the State and local FICMR review process
- Explore the feasibility of establishing a single team to review fetal deaths, or deaths due to medical causes, which would provide more consistency in determining cause and preventability of these complex circumstances
- Revise the data collection tool and develop standards and guidelines for the reporting and use of FICMR data, which would provide standardization of definitions and compilation, and would more easily allow for comparison of data from year to year
- The State FICMR and Injury Prevention Coordinators will collaborate on statewide prevention activities to address the major causes of mortality in Montana

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# APPENDICES

## Appendix A: FICMR Prevention Activities by County

<b>2005-2006 Deaths and FICMR Prevention Activities, by County</b>				
<b>County of Residence</b>	<b>Fetal Deaths</b>	<b>Infant Deaths</b>	<b>Child Deaths</b>	<b>Prevention Activities</b>
<b>Beaverhead</b>	2	1	1	Media/Public Education-Driving when tired; Back to sleep.
<b>Big Horn</b>	5	4	4	Seat belt/car seat awareness, Safe Sleep Education; Crow-Community Safety "Click It or Ticket"
<b>Blaine</b>	1	4	2	Public Education/outreach, Community Safety Education-Bathtub Safety, Suicide Crisis Line-Fort Belknap, Parenting Education-Fort Belknap
<b>Broadwater</b>	0	2	1	None
<b>Carbon</b>	1	1	1	Public Education on the hazards of low hanging electrical wires
<b>Carter</b>	0	0	0	None
<b>Cascade</b>	9	10	10	Safe Sleep Campaign, toxicity screens for methamphetamine lab kits: Seat Belt, Farm, and Gun Safety, Parenting classes, Safe Kids/Safe Communities, QRP, Teen Screen, SIDS Education, PSA-Propane Heater Safety, Dirt Bike Safety, Parent Education-when to seek medical care, Child Abuse Prevention Activity and Education, Dog Safety
<b>Chouteau</b>	0	2	0	None
<b>Custer</b>	1	2	3	Community Safety, School Education Activities, SIDS Prevention, Advocacy
<b>Daniels</b>	0	0	0	None
<b>Dawson</b>	0	1	0	PHHV program implemented, car seat/seat belt safety
<b>Deer Lodge</b>	0	2	1	Community Education-Selecting a Child Care Provider
<b>Fallon</b>	0	0	1	None
<b>Fergus</b>	0	1	0	Kick count for pregnancy
<b>Flathead</b>	10	10	13	Applied for Youth Suicide Grant, STOP sign placement, Media/Ed—Preventing Drowning, Community Ed-ATV Safety, Traffic Safety Study
<b>Gallatin</b>	10	13	7	Gun safety, Pertussis prevention, SIDS education, Healthy Native Babies, Crib Resource, Educate local law enforcement on PHHV services and how to refer

## 2005-2006 Deaths and FICMR Prevention Activities, by County

County of Residence	Fetal Deaths	Infant Deaths	Child Deaths	Prevention Activities
Garfield	0	0	0	None
Glacier	1	5	9	Back to Sleep, Home Safety and Bike Safety, Infant/child Safety, Prenatal Education
Golden Valley	0	0	0	Youth Suicide grant, QPR training
Granite	0	2	0	Back to Sleep
Hill	3	4	1	Education in schools; Proposed changes in agency practices Rocky Boy's: Community Safety Projects, HWY Safety Officer to assist in schools.
Jefferson	1	0	4	Proposed Public Education-Shaken Baby Syndrome
Judith Basin	0	0	0	None
Lake	8	4	3	Child Abuse Prevention, Underage Drinking, Safe Kids, QPR, Safe Sleep, Buckle Up, Public Forums—Maternal Drug Use, Benefits of Early Prenatal Care
Lewis and Clark	3	12	6	Shaken Baby, Purple Period Crying, Seat Belts, Car Seat Safety
Liberty	0	0	0	Car Seat Installation Education
Lincoln	2	1	2	Co-sleeping danger, Preventing Underage Drinking Coalition
McCone	0	0	0	None
Madison	0	0	1	None
Meagher	0	0	1	Car Seat/Seat Belt use, Graduated driver's license law
Mineral	1	1	1	Bike Safety, Public Education-Suspect Reporting
Missoula	10	8	10	Suicide Prevention, Safe Sleep, Co-sleeping, Safe Crib project, Community Safety—Pedestrian Safety, Bike Safety, Proposed Rx Drug Awareness Campaign
Musselshell	1	1	0	None
Park	1	4	3	Water safety education to schools, Pregnancy education about drugs and nutrition, Back to Sleep
Petroleum	0	0	0	None

## 2005-2006 Deaths and FICMR Prevention Activities, by County

County of Residence	Fetal Deaths	Infant Deaths	Child Deaths	Prevention Activities
Phillips	1	0	0	FICMR meetings
Pondera	2	2	1	Safe Kids/Safe Communities grant
Powder River	0	0	1	Public and School Education on Seat Belt Awareness
Powell	1	0	0	Back to Sleep, Bike Safety and helmets, Underage Drinking, QPR, W.H.A.L.E.
Prairie	0	0	0	None
Ravalli	3	5	4	Low birth weight prevention, Teen suicide prevention, Car Seat Safety, Back To Sleep, Community Resources for Unplanned Pregnancy
Richland	3	1	1	Prevention of underage drinking
Roosevelt	3	5	4	School Education-Mental Health, Suicide Prevention, Community Safety/Advocacy, Pubic information on accessing local health services., Education-Pertussis Vaccination, New programs: Tribal Health Case Management, PHHV
Rosebud	3	4	5	None
Sanders	0	1	4	Bike Safety, life jacket loaner, Safe Boating, Suicide Prevention, QPR training, DUI task force, Crib project
Sheridan	0	1	0	Car Seat Check, Home Visiting, Sex Education, Child Find
Silver Bow	2	5	5	Ongoing activities—Car Seat Program, Car Seat Safety; Education Activities in Schools and Media—Seat Belt Use, Inattentive Driving
Stillwater	1	6	1	Suicide Prevention, Gun Lock Distribution, Media and School Education
Sweet Grass	1	1	2	Communicate with providers, SIDS prevention, signage at intersections
Teton	0	1	2	Seat Belt Awareness, Monitor for prevalence of cancer diagnosis in county
Toole	1	0	1	Safe Kids, Underage Drinking, Car Seat Safety
Treasure	0	0	0	None
Valley	0	0	5	Suicide Prevention, Community Safety, Education activities in schools
Wheatland	0	0	2	None

**2005-2006 Deaths and FICMR Prevention Activities, by County**

<b>County of Residence</b>	<b>Fetal Deaths</b>	<b>Infant Deaths</b>	<b>Child Deaths</b>	<b>Prevention Activities</b>
<b>Wibaux</b>	0	0	0	Suicide Prevention
<b>Yellowstone</b>	12	24	14	Suicide Prevention, QPR, Media/Education—SIDS, Back to Sleep, Co-Sleeping Education, Car Seat Safety, Education on risks of Smoking during pregnancy.



## Appendix B: Fetal, Infant and Child Mortality Reviews by Site

Fetal, Infant, and Child Mortality Reviews 2005-2006 Deaths, by Site	
County/Reservation Performing Review	Number of Reviews
Beaverhead	4
Big Horn	21
Carbon	1
Cascade	38
Custer	5
Deer Lodge	3
Fergus	1
Flathead	33
Gallatin	26
Glacier	5
Hill	13
Jefferson	1
Lake	15
Lewis and Clark	27
Lincoln	2
Madison	1
Mineral	4
Missoula	30
Park	6
Powder River	1
Ravalli	12
Richland	6
Roosevelt	12
Sanders	4
Sheridan	1
Silver Bow	8
Stillwater	5
Sweet Grass	3
Valley	5
Wibaux	2
Yellowstone	41
Blackfeet Reservation	2
Fort Belknap Reservation	1
Northern Cheyenne Reservation	1
Rocky Boy Reservation	1

\*One death was reviewed by two counties.

## Appendix C: Glossary

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### GLOSSARY

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<b>ATV</b>	All-terrain vehicle
<b>Child Death</b>	Death of a child one year of age through 17 years
<b>DUI</b>	Driving under the influence
<b>Fetal Death</b>	Death of a fetus that weighs at least 350 grams or, if the weight is unknown, has reached at least 20 weeks gestation
<b>FICMR</b>	Fetal, Infant, and Child Mortality Review
<b>Infant Death</b>	Death of an infant less than 365 days (one year) old
<b>Infant Mortality Rate</b>	Number of deaths of infants under age 1 per 1,000 live births in a given year
<b>MCH</b>	Maternal and Child Health
<b>Perinatal period</b>	Period beginning after the 28 <sup>th</sup> week of pregnancy and ending 28 days after the birth of the baby.
<b>PHHV</b>	Public Health Home Visiting
<b>Preventable Death</b>	A preventable death is one in which, with retrospective analysis, it is determined that a reasonable intervention (e.g., medical, educational, social, legal or psychological) might have prevented the death. Reasonable is defined by taking into consideration the condition, circumstances or resources available.
<b>QPR</b>	Question, Persuade, Refer
<b>Sudden Infant Death Syndrome (SIDS)</b>	The diagnosis given for the sudden death of an infant under one year of age that remains unexplained after a complete investigation, including an autopsy, death scene investigation, and review of the infant's health history.
<b>Undetermined Deaths</b>	Any death for which data were insufficient to determine a cause or intent
<b>Unintentional Injury</b>	This category includes fatal injuries to children due to falls, drowning, motor vehicle crashes and other injuries. The cause of death is external (i.e. not medical)
<b>W.H.A.L.E.</b>	We Have a Little Emergency-Car decal and sticker program to help rescue personnel locate parent/guardian for children injured in car accident

## Appendix D: Overall Statewide Data

	2005	2006
Total child population		
Under 5	57,200	57,916
5 through 17	161,531	159,932
% of children in poverty	20%	17%
% of children in extreme poverty	7%	8%
% of children under 5 in poverty	20%	19%
Number of live births	11,573	12,499
Number of infant deaths (<1 year old)	81	70
Infant mortality rate	6.9	5.6
Number of child deaths (age 1-17)	70	67
Child mortality rate	0.25	0.32
% from accidents	37%	43%
% from homicide/suicides	26%	12%
% from non-traumatic causes	37%	45%
Number of motor vehicle crashes with		
driver under 18	3,084	3,158
% high school students who drove when		
drinking within 30 days of survey	18.5%	
% high school students who rarely or never		
wore a seat belt when riding in a car	13.9%	
% high school students who attempted		
suicide during the previous 12 months	10.3%	

Reference: 2008 Montana Kids Count Data Book, State Indicators

## Appendix E: FICMR Legislation

# Montana Code Annotated 2005

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**50-19-401. Short title.** This part may be cited as the "Fetal, Infant, and Child Mortality Prevention Act".

**History:** En. Sec. 1, Ch. 519, L. 1997.

**50-19-402. Statement of policy -- access to information.** (1) The prevention of fetal, infant, and child deaths is both the policy of the state of Montana and a community responsibility. Many community professionals have expertise that can be used to promote the health, safety, and welfare of fetuses, infants, and children. The use of these professionals in reviewing fetal, infant, and child deaths can lead to a greater understanding of the causes of death and the methods of preventing deaths. It is the intent of the legislature to encourage local communities to establish voluntary multidisciplinary fetal, infant, and child mortality review teams to study the incidence and causes of fetal, infant, and child deaths and make recommendations for community or statewide change, if appropriate, that may help prevent future deaths.

(2) A health care provider may disclose information about a patient without the patient's authorization or without the authorization of the representative of a patient who is deceased upon request of a local fetal, infant, and child mortality review team. The review team may request and may receive information from a county attorney as provided in [44-5-303](#)(4), from a tribal attorney, and from a health care provider as permitted in Title 50, chapter 16, part 5, or applicable federal law. The review team shall maintain the confidentiality of the information received.

(3) The local fetal, infant, and child mortality review team may:

(a) perform an indepth analysis of fetal, infant, and child deaths, including a review of records available by law;

(b) compile statistics of fetal, infant, and child mortality and communicate the statistics to the department of public health and human services for inclusion in statistical reports;

(c) analyze the preventable causes of fetal, infant, and child deaths, including child abuse and neglect; and

(d) recommend measures to prevent future fetal, infant, and child deaths.

(4) A local fetal, infant, and child mortality review team may not review deaths of fetuses, infants, or children who are Indians and which deaths occur within the boundaries of an Indian reservation with a tribal government that opposes the review.

**History:** En. Sec. 2, Ch. 519, L. 1997; amd. Sec. 11, Ch. 396, L. 2003; amd. Sec. 1, Ch. 413, L. 2003.

**50-19-403. Local fetal, infant, and child mortality review team.** (1) A local fetal, infant, and child mortality review team must be approved by the department of public health and human services. Approval may be given if:

(a) the county health department, a tribal health department, if the tribal government agrees, or both are represented on the team and the plan provided for in subsection (1)(d) includes the roles of the county health department, tribal health department, or both;

(b) a lead person has been designated for the purposes of management of the review team;

(c) at least five of the individuals listed in subsection (2) have agreed to serve on the review team; and

(d) a plan has been developed by the team that includes, at a minimum, operating policies of the review team covering collection and destruction of information obtained pursuant to [44-5-303](#)(4) or [50-19-402](#)(2).

(2) If a local fetal, infant, and child mortality review team is established, the team must be multidisciplinary and may include only:

(a) the county attorney or a designee;

(b) a law enforcement officer;

(c) the medical examiner or coroner for the jurisdiction;

- (d) a physician;
  - (e) a school district representative;
  - (f) a representative of the local health department;
  - (g) a representative from a tribal health department, appointed by the tribal government;
  - (h) a representative from a neighboring county or tribal government if there is an agreement to review deaths for that county or tribe;
  - (i) a representative of the department of public health and human services;
  - (j) a forensic pathologist;
  - (k) a pediatrician;
  - (l) a family practice physician;
  - (m) an obstetrician;
  - (n) a nurse practitioner;
  - (o) a public health nurse;
  - (p) a mental health professional;
  - (q) a local trauma coordinator;
  - (r) a representative of the bureau of Indian affairs or the Indian health service, or both, who is located within the county; and
  - (s) representatives of the following:
    - (i) local emergency medical services;
    - (ii) a local hospital;
    - (iii) a local hospital medical records department;
    - (iv) a local fire department; and
    - (v) the local registrar.
- (3) The designated lead person for the team shall submit membership lists to the department of public health and human services annually.

**History:** En. Sec. 3, Ch. 519, L. 1997; amd. Sec. 2, Ch. 413, L. 2003.

**50-19-404. Records -- confidentiality.** Material and information obtained by a local fetal, infant, and child mortality review team are not subject to disclosure under the public records law. Material and information obtained by a local fetal, infant, and child mortality review team are not subject to subpoena.

**History:** En. Sec. 4, Ch. 519, L. 1997; amd. Sec. 3, Ch. 413, L. 2003.

**50-19-405. Unauthorized disclosure -- civil penalty.** A person aggrieved by the use of information obtained pursuant to [50-19-402](#)(2) for a purpose not authorized by [50-19-402](#)(3) or by a disclosure of that information in violation of [50-19-402](#)(2) may bring a civil action in the district court of the county of the person's residence for damages, costs, and fees as provided in [50-16-553](#)(6) through (8) or [50-16-817](#).

**History:** En. Sec. 5, Ch. 519, L. 1997; amd. Sec. 12, Ch. 396, L. 2003; amd. Sec. 4, Ch. 413, L. 2003.

**50-19-406. Unauthorized disclosure -- misdemeanor.** A person who knowingly uses information obtained pursuant to [50-19-402](#)(2) for a purpose not authorized by [50-19-402](#)(3) or who discloses that information in violation of [50-19-402](#)(2) is guilty of a misdemeanor and upon conviction is punishable as provided in [46-18-212](#).

**History:** En. Sec. 6, Ch. 519, L. 1997; amd. Sec. 13, Ch. 396, L. 2003; amd. Sec. 5, Ch. 413, L. 2003.